

## Setting Things Straight with Curved Needles

The needle is generally considered the heart of the sewing machine - if you don't have one, it won't sew. And when it comes to the Union Special® 39500 Series machines, that heart is a curved 154 series needle instead of the usual straight needle.

When using a curved needle on an overedge like the 39500, or even on a chainstitch machine, it is mistakenly assumed that when the needle descends and penetrates the material it is entering at an angle, therefore causing needle deflection, easy needle breakage or skipped stitches, especially on seams or heavier materials. In reality, the design of the needle is such that it actually enters the material in a relatively vertical position, therefore virtually eliminating the needle deflection because of material. In addition, as the needle finishes its descent and starts back up, the curvature of the needle makes a natural needle loop for the looper to enter.

On the other hand, the overedge machines that utilize a straight needle actually will deflect more as the needle enters the material. This is because the design of these machines has the needle entering the material at an approximate 20° angle. Therefore the chance for needle deflection is increased considerably.

Union Special decided over fifty years ago to take advantage of the curved needle features for its overedge class and pursue it many steps further. The curvature of the needle when forming a needle loop allowed the timing of both the upper and lower loopers to be changed so that the stitch could be formed and set much quicker and easier. The timing changes also allowed for designing a new patented upper looper movement not found on any other machine. This new upper looper movement, combined with the timing changes, new loopers, throat plate and needle holder designs, meant that the stitch could be formed and set with less tension and more flexibility. This is why Union Special 39500 class machines produce the best overedge stitch formations with the best stretch and flexibility in the industry.

For additional information on curved needles for overedge machines, see the Groz-Beckert website at [www.groz-beckert.com](http://www.groz-beckert.com) for an article on curved needles for overedge (also called overlock) machines, as well as articles on many other types of needles.

Also, see the Schmetz website at [www.schmetz.com](http://www.schmetz.com) for information on their needles.



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